CR-AVE Flight Summary
2 February 2006
All times given in CST

General Information

Flight date – 2 February 2006
Flight description – Flight 9 CR-AVE *In Situ* Payload Data Flight (12th flight)
Flight duration - 4.5 hours
Crew – Bill Rieke, Joe Gerky
Instruments flown (25): 2DS, ACAM, ALIAS, Argus, CAFS, CAPS, CIMS, CO_2, CPI, CSI, FCAS, Frostpoint, ICOS, JLH, MACS, MMS, MTP, NMASS, Ozone, PALMS, PANTHER, PT, Scanning-HIS, WAS, Water Vapor

Flight Log

Engine Start	11:20 am	**Takeoff**	11:35 am	**Approach**	3:35 pm
Data Rec On	11:22 am	**Begin Descent**	3:15 pm	**Landing**	3:40 pm

Gear extensions/retractions

Gear Up	11:35 am					
Gear Down	3:38 pm					

Weather Observations

Climb-Out
- The sky was scattered on climb-out, with numerous cumulus clouds in the distance and cirrus layers above.
- Encountered light turbulence at 11:48 am from 32 through 35 kft.

Descent
- 3:15 pm – Began final descent.
- 3:22 pm – The CAPS display showed huge numbers from 44 through 40 kft.
- 3:35 pm – The weather was not pretty on the approach.
- 3:38 pm – Initiated 'gear down.'
- 3:50 pm – Excellent landing on a wet runway by Bill Rieke; the taxi was a little bumpy!

Flight Profile

- During the southern leg, we started looking for subvisible cirrus using the CAPS display.
- 12:00 pm – About 160 miles south of the field, we noticed a very prominent, dirty-looking cirrus cloud layer. We were at 53 kft and could not tell if we were above or below the layer, so we initially descended to 51 kft hunting. The CAPS display showed only a few hits (less than 5% of the screen), so we elected to climb.
- 12:13 pm – We started climbing and began picking up numerous hits at 53.5 kft, and got even more and larger numbers at 55 kft.
- 12:15 pm – The number of CAPS hits started diminishing at 56 kft. We continued to climb through 58 kft, with very few numbers above 5.
- 12:21 pm – We started back down and noticed 30 to 50% hits at 55.2K, 70% at 54.8 kft, 80 to 90% at 54.4 kft. The numbers slowly decreased as we approached 52.3 kft, so we started back up and settled on a target field from 53 through 56 kft. High numbers were continuous inside of that altitude block, with the highest numbers displayed at 54 kft on every run.
- 12:45 pm – The Michelin tire man in the back seat tripped off the CAFS Lower switch with his checklist. The switch was cycled back on, and the system performed flawlessly for the remainder of the flight.
- 1:17 pm – We began our crenellated run north, 35 miles north of waypoint 3 due to fuel management.
- 1:34 pm – We again encountered some light turbulence at 52 kft.
- 1:36 pm – We climbed to 58 kft, with the CAPS display showing a lot of numbers, indicating a subvisible cirrus layer from 53 to 56 kft, and then flew level for 15 minutes, as requested.
- 1:58 pm – We descended back down to 52 kft, where we again encountered light turbulence.
- 2:24 pm – We began the max-climb leg, and reached 60.5 kft at 2:56 pm.
- 2:56 pm – We began a spiral down to 57 kft, where we leveled off and performed the MMS box turn. We looked for our contrail with no joy; however, during the last leg at 270 ˚, where we had begun the box turn, there was a short concentration of high numbers on the CAPS display.

Instrument Notes

- 2:23 pm – Performed MMS pitch and yaw maneuvers.
- 3:00 pm – Turned on WAS2.
- 3:35 pm – Turned PALMS cloud switch on for about 20 seconds. The weather was not pretty on the approach.